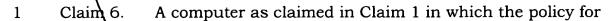
What Is Claimed Is:

- 1 Claim 1. A computer comprising
- 2 a central processing unit;
- 3 a bus;
- 4 memory; and
- 5 a graphics accelerator including:
- a texture value generating circuit for pixels describing a triangle,
 and

a cache storing texels used in generating texture values.

- 1 Claim 2. A computer as claimed in Claim 1 in which the texels for
- generating texture values for a complete polygon are prefetched to the
- 3 cache during triangle setup.
- 1 Claim 3. A computer as claimed in Claim 1 in which in which texels
- 2 for generating texture values for a pixel are fetched to the cache on
- demand.
- 1 Claim 4. A computer as claimed in Claim 1 in which the cache
- 2 includes a controller providing a policy for replacing texels in the cache.
- 1 Claim 5. A computer as claimed in Claim 1 in which the policy for
- 2 replacement of texels depends on whether pixels sufficient to generate
- 3 texture values for a polygon fit into the cache.

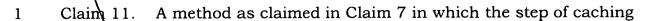


- 2 replacement of texels depends on whether texels have been used in
- 3 generating texture values for a last scan line of pixels.
- 1 Claim 7. \A method for generating texture values for pixels defining a
- 2 polygon to be displayed by a computer output device comprising the
- 3 steps of:
- 4 determining pixels defining a polygon,
- 5 generating texture coordinates for each pixel defining a polygon,

caching texels to be used in generating texture values for each pixel defining a polygon, and

- generating texture values for each pixel defining a polygon using texels
- 9 which have been cached.
- 1 Claim 8. A method as claimed in Claim 7 further comprising retaining
- 2 texels which have been cached until no longer needed for polygons for
- 3 which pixels have been determined
- 1 Claim 9. A method as claimed in Claim 7 further comprising replacing
- texels which have been cached when $n\lambda$ longer needed for polygons for
- which pixels have been determined.
- 1 Claim 10. A method as claimed in Claim λ in which the step of caching
- 2 texels to be used in generating texture values for each pixel defining a
- 3 polygon includes prefetching all texels required to generate texture
- 4 values for a polygon.

23 NV30



- 2 texels to be used in generating texture values for each pixel defining a
- 3 polygon\includes fetching texels as needed to generate texture values for
- 4 pixels.
- 1 Claim 12. A graphics accelerator comprising:
- 2 a texture coordinate generating circuit,
- a circuit responsive to pixel texture coordinates to select texels and
- 4 generate therefrom\a texture value for any pixel the color of which is to
- 5 be modified by a texture, and

a texel cache for texels used by the circuit to generate a texture value for any pixel.

- 1 Claim 13. A graphics accelerator as claimed in Claim 12 in which the
- 2 texel cache for texels used by the circuit to generate a texture value for
- 3 any pixel further comprises a control circuit for placing texels in the
- 4 cache.
- 1 Claim 14. A graphics accelerator as claimed in Claim 13 in which the
- 2 control circuit prefetches texels to the cache for a complete polygon.
- 1 Claim 15. A graphics accelerator as claimed in Claim 13 in which the
- 2 control circuit fetches texels to the cache as needed for pixels.
- 1 Claim 16. A graphics accelerator as claimed in Claim 13 in which the
- 2 control circuit provides a policy for replacing texels in the cache.

24 NV30

1 Claim 17. A graphics accelerator as claimed in Claim 16 in which the 2 policy for replacement of texels depends on whether texels sufficient to 3 generate texture values for a polygon fit into the cache.

Claim 18. A graphics accelerator as claimed in Claim 16 in which the policy for replacement of texels depends on whether texels have been used in generating texture values for a last scan line of pixels.

add

25 NV30